

WHAT IS CLAIMED IS:

1. A micromechanical dispensing device to dispense one or more fluids into an atmosphere, the micromechanical dispensing device comprising one or more micromechanical dispensing mechanisms, each micromechanical dispensing mechanism of the one or more micromechanical dispensing mechanisms fluidly connected to a corresponding fluid reservoir; the micromechanical dispensing device further comprising a micromechanical dispensing device controller, the micromechanical dispensing device controller arranged to communicate with each micromechanical dispensing mechanism of the one or more micromechanical dispensing mechanisms.
2. The micromechanical dispensing device to dispense one or more fluids into an atmosphere of **claim 1**, further comprising at least one port to which the corresponding fluid reservoir may be removably, fluidly connected.
3. The micromechanical dispensing device to dispense one or more fluids into an atmosphere of **claim 1**, wherein at least one micromechanical dispensing mechanism of the one or more micromechanical dispensing mechanisms further comprises an electrostatically-driven membrane, an electrostatically-actuated piston, a magnetically-actuated membrane, a thermally-actuated paddle vane or a ballistic aerosol dispensing mechanism.
4. The micromechanical dispensing device to dispense one or more fluids into an atmosphere of **claim 1**, wherein at least one fluid reservoir contains a fluid, the fluid comprising a perfume, pheromone, moisturizer, humectant, miticide, deodorizer, disinfectant, sanitizing agent or insecticide.

5. The micromechanical dispensing device to dispense one or more fluids into an atmosphere of **claim 1**, further comprising a sensor, the sensor arranged to form a sensor signal responsive to an atmospheric substance, and to communicate the sensor signal to the micromechanical dispensing device controller.

6. The micromechanical dispensing device to dispense one or more fluids into an atmosphere of **claim 5**, wherein the atmospheric substance is a fluid that has been dispensed by the micromechanical dispensing device to dispense one or more fluids into an atmosphere.

7. The micromechanical dispensing device to dispense one or more fluids into an atmosphere of **claim 5**, wherein the micromechanical dispensing device controller is arranged to actuate at least one of the one or more micromechanical dispensing mechanisms in response to the sensor signal.

8. The micromechanical dispensing device to dispense one or more fluids into an atmosphere of **claim 1** further comprising one or more check valves, wherein each of the one or more check valves is interposed between a corresponding micromechanical dispensing mechanism from amongst the one or more micromechanical dispensing mechanisms and the corresponding fluid reservoir of the corresponding micromechanical dispensing mechanism.

9. The micromechanical dispensing device to dispense one or more fluids into an atmosphere of **claim 1** further comprising a dispersion pad, wherein the dispersion pad is arranged to receive at least one fluid dispensed into the atmosphere by at least one of the one or more micromechanical dispensing mechanisms, wherein the dispersion pad comprises porous ceramics, celluloseic fibers, flax, cotton, wood, protein-based fibers, wool, animal hides, nylon, polyester or olefinic fibers.

10. The micromechanical dispensing device to dispense one or more fluids into an atmosphere of **claim 1** further comprising an orifice plate, the orifice plate comprising an orifice, the orifice plate arranged such that at least one fluid of the one or more fluids dispensed by at least one of the one or more micromechanical dispensing mechanisms is further dispensed through the orifice.

11. A system to dispense a plurality of fluids into an atmosphere, the system comprising a micromechanical dispensing device, the micromechanical dispensing device comprising one or more micromechanical dispensing mechanisms, each micromechanical dispensing mechanism of the one or more micromechanical dispensing mechanisms fluidly connected to a corresponding fluid reservoir; the micromechanical dispensing device further comprising a micromechanical dispensing device controller, the micromechanical dispensing device controller arranged to communicate with each micromechanical dispensing mechanism of the one or more micromechanical dispensing mechanisms; the system further comprising at least one other dispensing device, and a system controller, the system controller arranged to communicate with the micromechanical dispensing device and with each of the at least one other dispensing devices.

12. The system to dispense a plurality of fluids into an atmosphere of **claim 11**, wherein at least one of the one or more micromechanical dispensing mechanisms of the micromechanical dispensing device, further comprises an electrostatically-driven membrane, an electrostatically-actuated piston, a magnetically-actuated membrane, a thermally-actuated paddle vane or a ballistic aerosol dispensing mechanism.

13. The system to dispense a plurality of fluids into an atmosphere of **claim 11**, wherein at least one fluid reservoir contains a fluid, the fluid comprising a perfume, a pheromone, moisturizer, humectant, miticide, deodorizer, disinfectant, sanitizing agent or insecticide.

14. The system to dispense a plurality of fluids into an atmosphere of **claim 11**, wherein the system is arranged to dispense at least one of the plurality of fluids by the micromechanical dispensing device and to dispense at least one other of the plurality of fluids by the at least one other dispensing device.

15. The system to dispense a plurality of fluids into an atmosphere of **claim 11**, further comprising a system sensor, the system sensor arranged to form a system sensor signal responsive to an atmospheric substance and to communicate the system sensor signal to the system controller.

16. The system to dispense a plurality of fluids into an atmosphere of **claim 15**, wherein the system controller is arranged to actuate at least one of the micromechanical dispensing device and the at least one other dispensing device in response to the system sensor signal.

17. The system to dispense a plurality of fluids into an atmosphere of **claim 11**, wherein the micromechanical dispensing device further comprises a sensor, the sensor arranged to form a sensor signal responsive to the atmospheric substance and to communicate the sensor signal to the system controller.

18. The system to dispense a plurality of fluids into an atmosphere of **claim 17**, wherein the system controller is arranged to actuate at least one of the micromechanical dispensing device and the at least one other dispensing device in response to the sensor signal.

19. The system to dispense a plurality of fluids into an atmosphere of **claim 11**, further comprising a communication means, the communication means comprising a network.

20. The system to dispense a plurality of fluids into an atmosphere of **claim 19**, wherein the network comprises a wireless network.

21. A micromechanical dispensing device to dispense a plurality of fluids into an atmosphere, the micromechanical dispensing device comprising a plurality of micromechanical dispensing mechanisms, each micromechanical dispensing mechanism of the plurality of micromechanical dispensing mechanisms fluidly connected to a corresponding fluid reservoir; the micromechanical dispensing device further comprising a micromechanical dispensing device controller, the micromechanical dispensing device controller arranged to communicate with each micromechanical dispensing mechanism of the plurality of micromechanical dispensing mechanisms.

22. The micromechanical dispensing device to dispense a plurality of fluids into an atmosphere of **claim 21**, further comprising at least one port to which the corresponding fluid reservoir may be removably, fluidly connected.

23. The micromechanical dispensing device to dispense a plurality of fluids into an atmosphere of **claim 21**, wherein at least one micromechanical dispensing mechanism of the plurality of micromechanical dispensing mechanisms further comprises an electrostatically-driven membrane, an electrostatically-actuated piston, a magnetically-actuated membrane, a thermally-actuated paddle vane or a ballistic aerosol dispensing mechanism.

24. The micromechanical dispensing device to dispense a plurality of fluids into an atmosphere of **claim 21**, wherein at least one fluid reservoir contains a fluid, the fluid comprising a perfume, pheromone, moisturizer, humectant, miticide, deodorizer, disinfectant, sanitizing agent or insecticide.

25. The micromechanical dispensing device to dispense a plurality of fluids into an atmosphere of **claim 21**, further comprising a sensor, the sensor arranged to form a sensor signal responsive to an atmospheric substance and to communicate the sensor signal to the micromechanical dispensing device controller.

26. The micromechanical dispensing device to dispense a plurality of fluids into an atmosphere of **claim 25**, wherein the atmospheric substance to which the sensor signal is responsive is a fluid that has been dispensed by the micromechanical dispensing device to dispense a plurality of fluids into an atmosphere.

27. The micromechanical dispensing device to dispense a plurality of fluids into an atmosphere of **claim 25**, wherein the micromechanical dispensing device controller is arranged to at least one of the plurality of micromechanical dispensing mechanisms in response to the sensor signal.

28. The micromechanical dispensing device to dispense a plurality of fluids into an atmosphere of **claim 21** further comprising at least one check valve interposed between at least one of the plurality of micromechanical dispensing mechanisms and its corresponding fluid reservoir.

29. The micromechanical dispensing device to dispense a plurality of fluids into an atmosphere of **claim 21** further comprising a dispersion pad, wherein the dispersion pad is arranged to receive at least one fluid dispensed into the atmosphere by at least one of the plurality of micromechanical dispensing mechanisms, wherein the dispersion pad comprises porous ceramics, celluloseic fibers, flax, cotton, wood, protein-based fibers, wool, animal hides, nylon, polyester or olefinic fibers.

30. The micromechanical dispensing device to dispense a plurality of fluids into an atmosphere of **claim 21** further comprising an orifice plate, the orifice plate comprising an orifice, the orifice plate arranged such that at least one fluid of the plurality of fluids dispensed by at least one of the plurality of micromechanical dispensing mechanisms is further dispensed through the orifice.

31. A system to dispense a plurality of fluids into an atmosphere, the system comprising a micromechanical dispensing device, the micromechanical dispensing device comprising a plurality of micromechanical dispensing mechanisms, each micromechanical dispensing mechanism of the plurality of micromechanical dispensing mechanisms fluidly connected to a corresponding fluid reservoir; the micromechanical dispensing device further comprising a micromechanical dispensing device controller, the micromechanical dispensing device controller arranged to communicate with each micromechanical dispensing mechanism of the plurality of micromechanical dispensing mechanisms; and the system further comprising a system controller, the system controller arranged to communicate with the micromechanical dispensing device.

32. The system to dispense a plurality of fluids into an atmosphere of **claim 31**, wherein at least one of the plurality of micromechanical dispensing mechanisms of the micromechanical dispensing device, further comprises an electrostatically-driven membrane, an electrostatically-actuated piston, a magnetically-actuated membrane, a thermally-actuated paddle vane or a ballistic aerosol dispensing mechanism.

33. The system to dispense a plurality of fluids into an atmosphere of **claim 31**, wherein at least one fluid reservoir of the micromechanical dispensing device contains a fluid, the fluid comprising a perfume, pheromone, moisturizer, humectant, miticide, deodorizer, disinfectant, sanitizing agent or insecticide.

34. The system to dispense a plurality of fluids into an atmosphere of **claim 31**, further comprising a second dispenser to dispense one or more fluids into an atmosphere, the second dispenser, arranged to communicate with the system controller, wherein at least one fluid reservoir of the micromechanical dispensing device contains a first fluid and the second dispenser contains a second fluid which is different from the first fluid.

35. The system to dispense a plurality of fluids into an atmosphere of **claim 31**, further comprising a system sensor, the system sensor arranged to form a system sensor signal responsive to an atmospheric substance and to communicate the system sensor signal to the system controller.

36. The system to dispense a plurality of fluids into an atmosphere of **claim 35**, wherein the system controller is arranged to actuate the micromechanical dispensing device in response to the system sensor signal.

37. The system to dispense a plurality of fluids into an atmosphere of **claim 31**, wherein the micromechanical dispensing device further comprises a sensor, the sensor arranged to form a sensor signal responsive to an atmospheric substance and to communicate the sensor signal to the system controller.

38. The system to dispense a plurality of fluids into an atmosphere of **claim 37**, wherein the system controller is arranged to actuate the micromechanical dispensing device in response to the sensor signal.

39. The system to dispense a plurality of fluids into an atmosphere of **claim 31**, further comprising a communication means, the communication means comprising a wireless network.

40. A micromechanical dispensing device to dispense one or more fluids into an atmosphere, the micromechanical dispensing device comprising a micromechanical dispensing mechanism, the micromechanical dispensing mechanism fluidly connected to a plurality of fluid reservoirs; and further comprising a valve, the valve arranged to selectively couple each fluid reservoir of the plurality of fluid reservoirs to the micromechanical dispensing mechanism; and, the micromechanical dispensing device further comprising a micromechanical dispensing device controller, the micromechanical dispensing device controller arranged to communicate with the micromechanical dispensing mechanism and the valve.

41. The micromechanical dispensing device to dispense one or more fluids into an atmosphere of **claim 40**, wherein the micromechanical dispensing mechanism further comprises an electrostatically-driven membrane, an electrostatically-actuated piston, a magnetically-actuated membrane, a thermally-actuated paddle vane or a ballistic aerosol dispensing mechanism.

42. The micromechanical dispensing device to dispense one or more fluids into an atmosphere of **claim 40**, wherein at least one fluid reservoir contains a fluid, the fluid comprising a perfume, pheromone, moisturizer, humectant, miticide, deodorizer, disinfectant, sanitizing agent or insecticide.

43. The micromechanical dispensing device to dispense one or more fluids into an atmosphere of **claim 40**, further comprising a sensor, the sensor arranged to form a sensor signal responsive to an atmospheric substance and to communicate the sensor signal to the micromechanical dispensing device controller, and the micromechanical dispensing device controller is arranged to actuate the micromechanical dispensing mechanism in response to the sensor signal.

44. The micromechanical dispensing device to dispense one or more fluids into an atmosphere of **claim 40** further comprising a mixing chamber, the mixing chamber fluidly interposed between the micromechanical dispensing mechanism and the plurality of fluid reservoirs.

45. A micromechanical dispensing device to dispense a fluid into an atmosphere the micromechanical dispensing device comprising a plurality of micromechanical dispensing mechanisms, the plurality of micromechanical dispensing mechanisms fluidly connected to a fluid reservoir; and, the micromechanical dispensing device further comprising a micromechanical dispensing device controller, the micromechanical dispensing device controller arranged to communicate with the plurality of micromechanical dispensing mechanisms.

46. The micromechanical dispensing device to dispense a fluid into an atmosphere of **claim 45**, further comprising a port to which the fluid reservoir may be removably, fluidly connected.

47. The micromechanical dispensing device to dispense a fluid into an atmosphere of **claim 45**, wherein at least one micromechanical dispensing mechanism further comprises an electrostatically-driven membrane, an electrostatically-actuated piston, a magnetically-actuated membrane, a thermally-actuated paddle vane or a ballistic aerosol dispensing mechanism.

48. The micromechanical dispensing device to dispense a fluid into an atmosphere of **claim 45**, wherein the fluid reservoir contains a fluid, the fluid comprising a perfume, pheromone, moisturizer, humectant, miticide, deodorizer, disinfectant, sanitizing agent or insecticide.

49. The micromechanical dispensing device to dispense a fluid into an atmosphere of **claim 45**, further comprising a sensor, the sensor arranged to form a sensor signal responsive to an atmospheric substance and to communicate the sensor signal to the micromechanical dispensing device controller, and the micromechanical dispensing device controller, is arranged to actuate the plurality of micromechanical dispensing mechanisms in response to the sensor signal.